INI CET Surgery

Sample Paper – 7

Duration: 14 Minutes **Maximum Marks: 15**

Instructions

- This paper contains **15** Multiple Choice Questions (Single Best Response), modelled on the General Surgery content of **INI CET** (Institutes of National Importance Combined Entrance Test) conducted by AIIMS New Delhi.
- The **15-question** length matches the number of Surgery items you actually meet in the real 200-question paper.
- Each correct answer carries **+1 mark**. There is **negative marking of one-third (0.33) mark** for every incorrect answer; unattempted questions carry no penalty.
- Every question has **exactly one best answer**. Choose the single most appropriate option.
- Attempt this practice paper in one timed sitting of about **14 minutes**, the pace the real computer-based test demands.

Gastrointestinal Surgery

Q1. In the lithotomy position, internal haemorrhoids classically occur at which three primary positions in the anal canal?

(A) 1, 5 and 9 o'clock

(B) 2, 6 and 10 o'clock

(C) 3, 7 and 11 o'clock

(D) 4, 8 and 12 o'clock

Q2. The most common site of a chronic anal fissure (fissure-in-ano) is the:

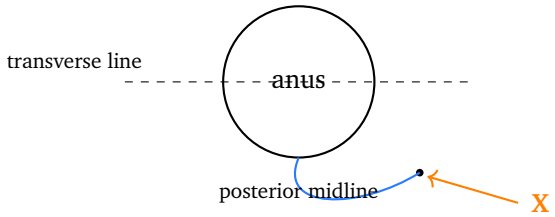
(A) Posterior midline

(B) Anterior midline

(C) Right lateral wall

(D) Left lateral wall

Q3. In the schematic below, the dashed transverse anal line divides the perianal skin. An external fistula opening lies posterior to this line (marked **X**). By Goodsall's rule, its internal opening will be at the:



(A) Posterior midline, reached by a curved tract

(B) Anterior midline, reached by a straight radial tract

(C) Nearest anal crypt, reached in a straight radial line

(D) Lateral wall matching the side of the external opening

Hepatobiliary and Pancreatic Surgery

Q4. A raised serum level of which tumour marker best supports a diagnosis of hepatocellular carcinoma in a cirrhotic patient with a new liver mass?

(A) CA 19-9

(B) Alpha-fetoprotein (AFP)

(C) Carcinoembryonic antigen (CEA)

(D) Prostate-specific antigen (PSA)

Q5. For a small (under 3 cm) solitary hepatocellular carcinoma in a patient with cirrhosis who is unfit for surgical resection, which local treatment is most commonly used?

(A) External beam radiotherapy alone

(B) Systemic chemotherapy alone

(C) Radiofrequency ablation

(D) Watchful waiting with no intervention

Breast and Endocrine Surgery

Q6. The combination of medullary thyroid carcinoma, phaeochromocytoma and primary hyperparathyroidism defines which multiple endocrine neoplasia syndrome?

(A) MEN 1

(B) MEN 2B

(C) MEN 2A

(D) Von Hippel-Lindau syndrome

Q7. Recurrent, multiple and atypically sited peptic ulcers together with a very high fasting serum gastrin point to a gastrinoma. This clinical picture is known as:

(A) Zollinger-Ellison syndrome

(B) Whipple's triad

(C) Carcinoid syndrome

(D) Cushing's syndrome

Trauma and Critical Care

Q8. In a haemodynamically unstable patient with an open-book pelvic fracture, the immediate first step to reduce pelvic volume and control venous bleeding is:

(A) Immediate exploratory laparotomy

(B) Application of a pelvic binder

(C) Below-knee traction of both legs

(D) External beam radiotherapy

Q9. The earliest and most reliable clinical feature of acute compartment syndrome of the leg is:

(A) Loss of distal pulses

(B) Pain out of proportion, aggravated by passive stretch of the muscles

(C) Complete paralysis of the limb

(D) Pallor of the overlying skin

Q10. Acute compartment syndrome is confirmed when the measured compartment pressure comes within about 30 mmHg of the diastolic pressure. The definitive treatment is:

(A) Elevation of the limb well above heart level

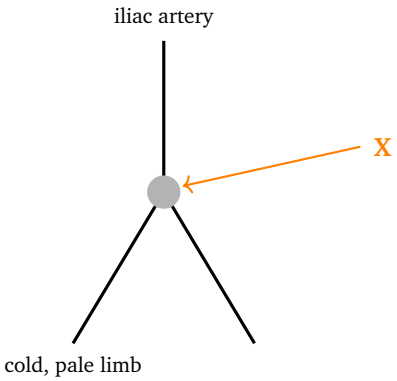
(B) Ice packs and strong analgesia

(C) Emergency fasciotomy

(D) A tight compression bandage

Urology and Vascular Surgery

Q11. In the arterial tree shown, an embolus has lodged at the femoral bifurcation (marked **X**), producing acute limb ischaemia. The six Ps of this condition include pain, pallor, pulselessness, paraesthesia and poikilothermia. The sixth P is:



(A) Pyrexia

(B) Polyuria

(C) Petechiae

(D) Paralysis

Q12. The most common cardiac source of a peripheral arterial embolus requiring embolectomy is:

(A) Infective endocarditis of the aortic valve

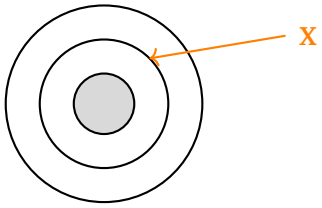
(B) Left atrial thrombus due to atrial fibrillation

(C) A ventricular septal defect

(D) A patent ductus arteriosus

Surgical Oncology and Miscellaneous

Q13. The ultrasound "target" (doughnut) sign shown, with concentric rings and a central hypoechoic core (marked **X**), in an infant with colicky pain and red-currant-jelly stools, indicates:



(A) Hypertrophic pyloric stenosis

(B) Hirschsprung disease

(C) Meckel's diverticulum

(D) Intussusception

Q14. A 4-week-old boy has non-bilious projectile vomiting, visible peristalsis and a firm, olive-shaped mass in the epigastrium. The most likely diagnosis is:

(A) Duodenal atresia

(B) Intussusception

(C) Hirschsprung disease

(D) Hypertrophic pyloric stenosis

Q15. A neonate fails to pass meconium in the first 48 hours and has a distended abdomen; rectal biopsy shows absence of ganglion cells in the distal bowel. The diagnosis is:

(A) Hirschsprung disease

(B) Anorectal malformation

(C) Meconium ileus

(D) Necrotising enterocolitis

Detailed Solutions

Q1.

Solution

Concept – primary sites of internal haemorrhoids: Internal haemorrhoids arise at fixed positions of the anal cushions.

Step 1 – recall the anatomy: The anal cushions receive the terminal branches of the superior rectal vessels.

Step 2 – name the positions: In the lithotomy position they sit at **3, 7 and 11 o'clock** (right anterior, right posterior and left lateral).

Why the other options are wrong:

- A, B and D: 1/5/9, 2/6/10 and 4/8/12 o'clock do not match the fixed sites of the anal cushions.

Final Answer: 3, 7 and 11 o'clock ⇒ C

Answer: (C) Go Back to Q1

Q2.

Solution

Concept – site of anal fissure: Blood supply of the anal canal decides where fissures form.

Step 1 – recall the vascular watershed: The posterior midline is the least perfused part of the anoderm.

Step 2 – apply it: Poor perfusion makes the **posterior midline** the commonest site of a chronic fissure in both sexes.

Why the other options are wrong:

- B, anterior midline: the next most common, more often in women, but not the first.
- C and D, lateral walls: fissures here are atypical and should raise suspicion of Crohn's disease, tuberculosis or malignancy.

Final Answer: Posterior midline ⇒ A

Answer: (A) Go Back to Q2

Q3.

Solution

Concept – Goodsall's rule: The rule predicts the internal opening of a fistula-in-ano from the external opening.

Step 1 – read the diagram: The external opening (X) lies **posterior** to the transverse anal line.

Step 2 – apply the rule: A posterior external opening tracks along a **curved** path to the **posterior midline**, so all posterior fistulae converge there.

Why the other options are wrong:

- B, anterior midline with a straight tract: this is the pattern for an anterior external opening, not a posterior one.
- C, straight radial line to the nearest crypt: applies only to anterior openings.
- D, lateral wall matching the external opening: not predicted by Goodsall's rule.

Final Answer: Posterior midline via a curved tract $\Rightarrow$ A

Answer: (A) Go Back to Q3

Q4.

Solution

Concept – tumour marker for hepatocellular carcinoma: Each marker maps to a specific tumour.

Step 1 – match the liver: Alpha-fetoprotein (AFP) is the marker of hepatocellular carcinoma and is used with imaging for diagnosis and follow-up.

Step 2 – context: A rising AFP with a new mass in a cirrhotic liver strongly favours HCC.

Why the other options are wrong:

- A, CA 19-9: pancreatic and biliary (cholangiocarcinoma) tumours.
- C, CEA: colorectal carcinoma.
- D, PSA: prostate carcinoma.

Final Answer: Alpha-fetoprotein (AFP) $\Rightarrow$ B

Answer: (B) Go Back to Q4

Q5.

Solution

Concept – local treatment of small HCC: When resection is not possible, local ablation can be curative for small tumours.

Step 1 – pick the technique: Radiofrequency ablation destroys a small (under 3 cm) tumour with heat delivered through a needle electrode.

Step 2 – why it fits: It spares liver parenchyma, suits a cirrhotic patient unfit for surgery, and gives outcomes close to resection for very small lesions.

Why the other options are wrong:

- A, radiotherapy alone: not the standard local treatment for a small HCC.
- B, systemic chemotherapy alone: HCC responds poorly to conventional chemotherapy.
- D, watchful waiting: leaves a treatable tumour to progress.

Final Answer: Radiofrequency ablation $\Rightarrow$ C

Answer: (C) Go Back to Q5

Q6.

Solution

Concept – MEN syndromes: Each MEN syndrome has a defined trio of tumours.

Step 1 – match the trio: Medullary thyroid carcinoma, phaeochromocytoma and primary hyperparathyroidism together define **MEN 2A** (Sipple syndrome), caused by RET mutations.

Step 2 – clinical link: Screening for phaeochromocytoma is essential before any thyroid surgery in these patients.

Why the other options are wrong:

- A, MEN 1: parathyroid, pancreatic and pituitary tumours (the "3 Ps").
- B, MEN 2B: medullary thyroid carcinoma, phaeochromocytoma, mucosal neuromas and a marfanoid habitus, but no hyperparathyroidism.
- D, Von Hippel-Lindau: haemangioblastomas, renal cell carcinoma and phaeochromocytoma, not this trio.

Final Answer: MEN 2A $\Rightarrow$ C

Answer: (C) Go Back to Q6

Q7.

Solution

Concept – gastrinoma: A gastrin-secreting tumour drives acid hypersecretion.

Step 1 – name the syndrome: Multiple, recurrent and atypically sited peptic ulcers with a high fasting gastrin define **Zollinger-Ellison syndrome**.

Step 2 – context: The gastrinoma usually lies in the "gastrinoma triangle" around the duodenum and pancreatic head, and may be part of MEN 1.

Why the other options are wrong:

- B, Whipple's triad: describes an insulinoma (hypoglycaemic symptoms, low glucose, relief with glucose), not a gastrinoma.
- C, carcinoid syndrome: flushing and diarrhoea from serotonin-secreting tumours.
- D, Cushing's syndrome: cortisol excess, unrelated to peptic ulceration by gastrin.

Final Answer: Zollinger-Ellison syndrome $\Rightarrow$ A

Answer: (A) Go Back to Q7

Q8.

Solution

Concept – unstable pelvic fracture: An open-book fracture opens the pelvic ring and lets venous bleeding pool.

Step 1 – pick the first step: A **pelvic binder** placed at the level of the greater trochanters closes the ring and reduces pelvic volume.

Step 2 – why it fits: Reducing the volume tamponades the venous plexus and helps control bleeding while resuscitation continues.

Why the other options are wrong:

- A, immediate laparotomy: opening the abdomen can release the tamponade and worsen venous bleeding; it is not the first step.
- C, leg traction: does not close the pelvic ring.
- D, radiotherapy: has no role in acute trauma.

Final Answer: Application of a pelvic binder $\Rightarrow$ B

Answer: (B) Go Back to Q8

Q9.

Solution

Concept – compartment syndrome: Rising pressure in a closed fascial space threatens the muscle before it kills the pulse.

Step 1 – name the earliest sign: Pain out of proportion, made worse by passive stretch of the muscles in the compartment is the earliest and most reliable feature.

Step 2 – sequence: Pulselessness, pallor and paralysis are late signs; waiting for them risks irreversible muscle death.

Why the other options are wrong:

- A, loss of pulses: a late finding, often preserved early.
- C, paralysis: a very late sign of established damage.
- D, pallor: late and non-specific.

Final Answer: Pain aggravated by passive stretch ⇒ B

Answer: (B) Go Back to Q9

Q10.

Solution

Concept – treating compartment syndrome: Once confirmed, the pressure must be released without delay.

Step 1 – confirm the diagnosis: A compartment pressure within about 30 mmHg of the diastolic pressure confirms acute compartment syndrome.

Step 2 – name the treatment: Emergency fasciotomy decompresses all involved compartments and restores perfusion.

Why the other options are wrong:

- A, elevation above heart level: reduces arterial inflow and can worsen ischaemia; the limb should be kept at heart level, not treated by elevation.
- B, ice and analgesia: does not relieve the raised pressure.
- D, compression bandage: further raises compartment pressure.

Final Answer: Emergency fasciotomy ⇒ C

Answer: (C) Go Back to Q10

Q11.

Solution

Concept – the six Ps of acute limb ischaemia: The syndrome is remembered as six features beginning with P.

Step 1 – read the diagram: An embolus (X) at the femoral bifurcation blocks inflow, producing a cold, pale, pulseless limb.

Step 2 – name the sixth P: With pain, pallor, pulselessness, paraesthesia and poikilothermia already listed, the sixth is **paralysis**, a late feature signalling advanced ischaemia.

Why the other options are wrong:

- A, pyrexia: not part of the six Ps.
- B, polyuria: unrelated to limb ischaemia.
- C, petechiae: a bleeding sign, not an ischaemic one.

Final Answer: Paralysis $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q11

Q12.

Solution

Concept – source of arterial emboli: Most peripheral emboli are of cardiac origin.

Step 1 – name the commonest source: A **left atrial thrombus due to atrial fibrillation** is the most common cardiac source of a peripheral arterial embolus.

Step 2 – management link: Sudden limb ischaemia in a patient with an irregularly irregular pulse suggests embolism and often needs urgent embolectomy with a Fogarty catheter.

Why the other options are wrong:

- A, aortic endocarditis: can throw septic emboli but is far less common.
- C, ventricular septal defect: a shunt, not a usual embolic source.
- D, patent ductus arteriosus: a congenital shunt, not an embolic source.

Final Answer: Left atrial thrombus from atrial fibrillation $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q12

Q13.

Solution

Concept – the target sign: Concentric rings on ultrasound represent bowel-within-bowel.

Step 1 – read the diagram: The "target" or "doughnut" sign (X) is bowel telescoped into itself.

Step 2 – match the clinical picture: Colicky pain and red-currant-jelly stools in an infant with this sign indicate **intussusception**, most often ileocolic.

Why the other options are wrong:

- A, pyloric stenosis: gives a target on ultrasound of the pylorus but presents with projectile vomiting, not the picture here.
- B, Hirschsprung disease: a neonatal obstruction with no ganglion cells, no target sign.
- C, Meckel's diverticulum: usually painless rectal bleeding, no target sign.

Final Answer: Intussusception $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q13

Q14.

Solution

Concept – hypertrophic pyloric stenosis: Hypertrophy of the pylorus obstructs gastric outflow.

Step 1 – read the presentation: A firstborn boy around 3 to 6 weeks old with **non-bilious projectile vomiting**, visible peristalsis and a palpable "olive" fits **hypertrophic pyloric stenosis**.

Step 2 – confirm and treat: Ultrasound shows a thickened, elongated pylorus; after correcting the hypochloraemic hypokalaemic alkalosis, a Ramstedt pyloromyotomy is done.

Why the other options are wrong:

- A, duodenal atresia: bilious vomiting from birth with a "double bubble", not a palpable olive.
- B, intussusception: colicky pain and red-currant-jelly stools, not projectile vomiting.
- C, Hirschsprung disease: distal obstruction with failure to pass meconium.

Final Answer: Hypertrophic pyloric stenosis $\Rightarrow$ D

Answer: (D) Go Back to Q14

Q15.

Solution

Concept – Hirschsprung disease: Absent ganglion cells leave a segment of bowel unable to relax.

Step 1 – read the biopsy: Absence of ganglion cells in the distal bowel confirms **Hirschsprung disease** (aganglionic megacolon).

Step 2 – match the presentation: Delayed passage of meconium beyond 48 hours with abdominal distension is the classic neonatal picture.

Why the other options are wrong:

- B, anorectal malformation: an absent or ectopic anal opening on examination, with ganglion cells present.
- C, meconium ileus: inspissated meconium, strongly linked to cystic fibrosis, with normal ganglion cells.
- D, necrotising enterocolitis: an acquired inflammatory disease, often in preterm infants, with pneumatosis intestinalis.

Final Answer: Hirschsprung disease $\Rightarrow$ A

Answer: (A) Go Back to Q15

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	C	2	A	3	A	4	B	5	C
6	C	7	A	8	B	9	B	10	C
11	D	12	B	13	D	14	D	15	A